Featured Stories

Mars Helicopter Spins Its Way Into History

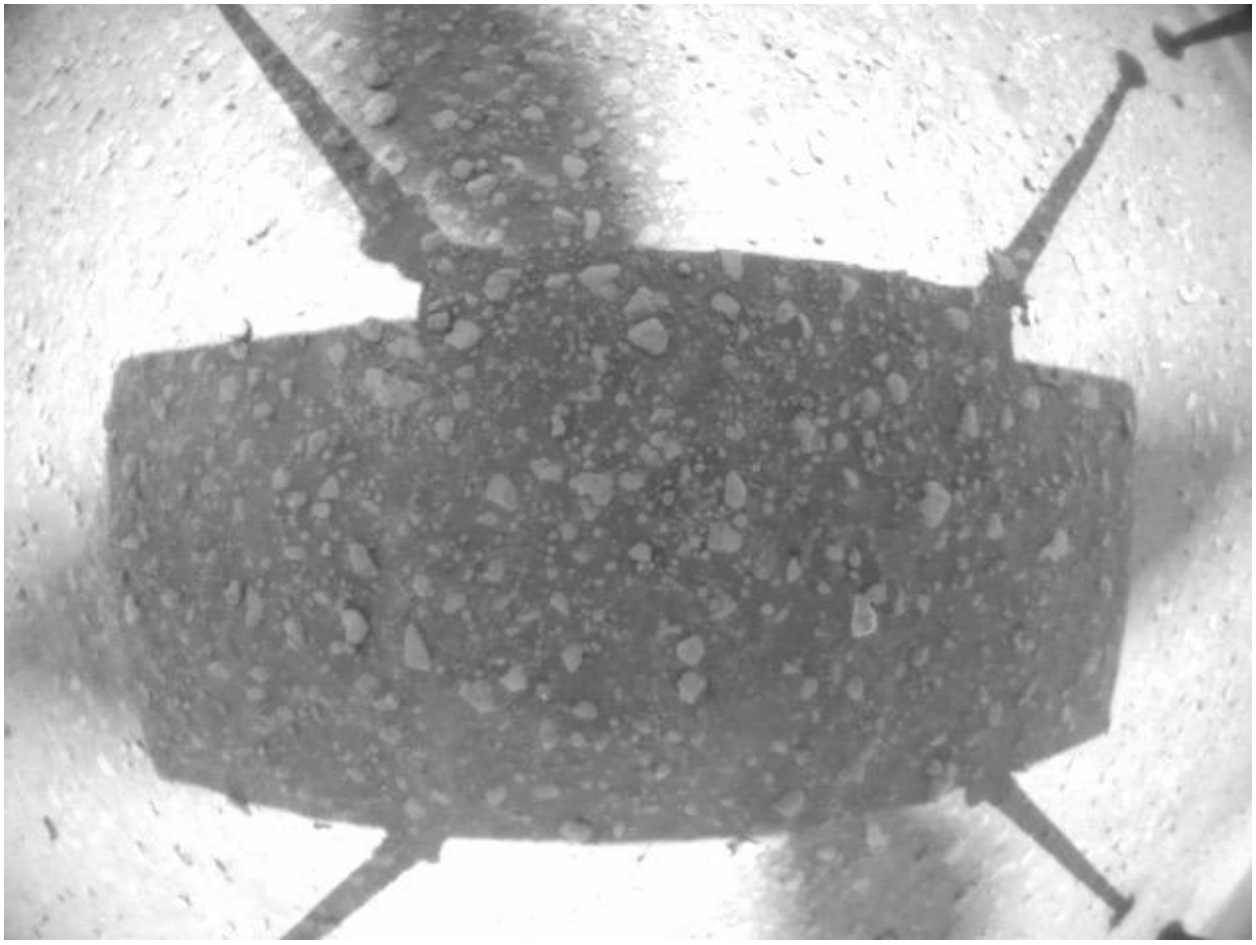
By Jane Platt

After years of imagining, designing, and testing the Mars helicopter, the flight of fantasy is now a reality five times over. Ingenuity has become the first vehicle to complete powered, controlled flight on another planet.

During its first five flights through the thin Martian atmosphere, progressively higher and farther, the mission more than accomplished its goals as a tech demo and achieved what has been dubbed the first "Wright Brothers moment" on a world beyond our own. And the Perseverance rover, which carried it to Mars, has beamed back images, video, and audio of Ingenuity—the sights and sounds of a helicopter on the Red Planet.

Get a 3D view of the helicopter flying, as if you're standing on Mars, in a new video stitched together from images taken by the zoomable dual-camera Mastcam-Z on Perseverance All you need is a pair of color-filtered glasses (you can even make a quick pair yourself).

Another viewing option, from Ingenuity's fourth flight, includes video captured by Perseverance, plus the actual sound of the helicopter flying through the thin Martian atmosphere, (headphones recommended but not needed).



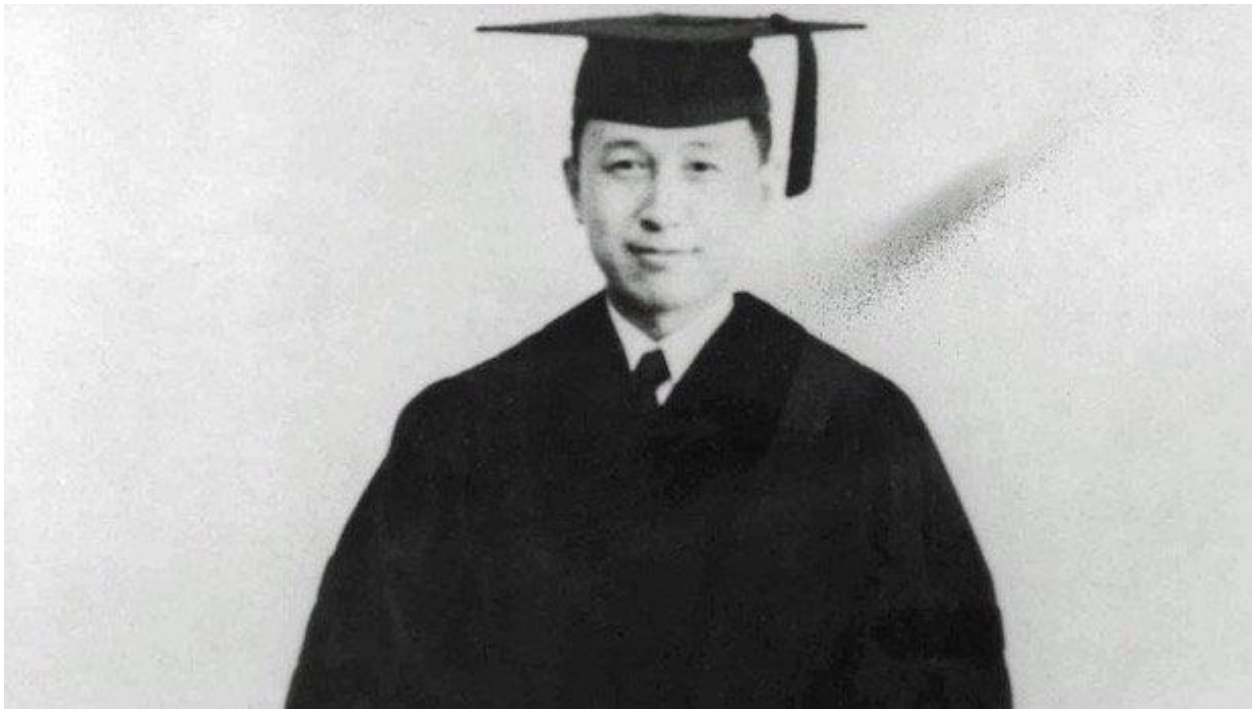
A picture from the navigation camera aboard Ingenuity captured the helicopter on takeoff during Flight Two, showing little sign of dust. Credit: NASA/JPL-Caltech

Now that Ingenuity has achieved its tech demo goals, it is entering a new phase, testing its abilities as an aerial explorer by flying over areas beyond the rover's range. The implications are significant for future missions that could include an aerial vehicle to help scout and explore Mars and other worlds. As an earthly comparison, imagine taking a road trip and having your own personal helicopter fly ahead to alert you to points of interest and warn you away from treacherous routes.

As for the rover itself, it might be deserving of a new nickname: Patience. It has supported Ingenuity by serving as a communications base station, while awaiting a chance to dig in — literally and figuratively — to study the Martian surface. The rover's science mission will begin in earnest now, and it has, in fact, already started focusing its science instruments on rocks on the floor of Jezero Crater.

It's a first step in the quest by Perseverance to look for signs of ancient life, collect and store samples of Martian rock and soil, and help pave the way for human exploration of the Red Planet.

Follow the adventures of the Perseverance rover and the Ingenuity helicopter for latest news.



Qian Xuesen in cap and gown after receiving his PhD from Caltech in 1939.

A JPL Founder's Difficult Journey, from China to the U.S. and Back Again

By Erik Conway

Welcome to the Historian's Corner, where we explore the origins, mysteries, and curiosities of our Lab. I'm Erik Conway, JPL's historian, and I'll be your guide as we travel through time together.

May is Asian Pacific American Heritage month, and I thought I'd take the opportunity to tell the story of Qian Xuesen, who was one of JPL's founders and later became the leader of the People's Republic of China's missile and space program.

Qian Xuesen, also alliterated as Hsue-shen Tsien in the U.S., was born in Hangzhou, China, in December 1911. He attended Jiaotong University in Shanghai beginning in 1929. At the time Shanghai hosted many Western businesses and business people, and was already a hotbed of anti-imperialist activism by students due to the government's collaboration with Westerners. The Japanese invasion of Manchuria in 1931 further inflamed the situation, particularly after China's government decided not to contest the invasion. Japan bombed Shanghai anyway. Qian concluded that a country without an air force was hopelessly vulnerable.

He switched his major from railroad engineering to aeronautics, and in 1934 won a scholarship administered by Tsinghua University that allowed him to study at MIT. He spent his first fellowship year studying the tiny Chinese aircraft industry.

Qian moved to MIT in August 1935. He didn't stay long. MIT's aeronautical program was very hands-on, while Qian's core skills were in theory and mathematics. The MIT faculty also expected him to work in the aircraft industry to gain experience, which, as a Chinese national, he couldn't do. He finished a Master's Degree at MIT in 1936, and had an interview at Caltech with Theodore von Kármán that same summer. Von Kármán recruited him on the spot. He became the office mate of one of JPL's other founders at Caltech's Guggenheim Aeronautical Laboratory (GALCIT) in early 1937, Apollo M. O. Smith. Soon after, he started working on papers with another of Von Kármán's students, Frank Malina.

He and Malina became friends, attending cultural events at the Chinese consulate in Los Angeles together. Malina would be incensed over some of the anti-Chinese sentiment common in the U.S. at the time, writing home in 1937 that "Over the radio is coming Hoover's voice…[He] is mixed up with too much capital to be very representative of one standing for liberty. After reading his suggestion of tying Chinese [derogatory term for Asian workers] to stakes if they did not obey I lost faith in his good intentions." Malina was speaking of former U.S. president Herbert Hoover, who spent his retirement crusading against President Roosevelt's "New Deal."

Malina would introduce Qian to Sidney Weinbaum, Malina's tutor for learning Russian—and the leader of Communist Party Professional Unit 122, which was active at Caltech at the time. Neither Malina nor Qian knew it at the time, but that meeting sealed their fates.

Members of Weinbaum's Unit 122 often discussed plenty of economic and political criticism of American capitalism, which in their view had clearly failed to deliver prosperity for nearly a decade by this time. But before World War II, the Communist Party of the U.S. (CPUSA) had two other major attractions for American intellectuals: it was the only anti-racist party (Roosevelt's New Deal coalition included all the Jim Crow-era southern Democrats, while the Republican party was already splitting between pro- and anti-civil rights factions), and the CPUSA was the only party to publicly support anti-fascism in Europe.

Earlier that year, Malina may have joined the CPUSA, based on a handwritten copy of a membership card made by a member of Los Angeles Police Department's "Red Squad," which existed to disrupt union organizing and conduct surveillance on alleged Communists. In 1958, three years after his return to China, Qian would admit to also having joined briefly in 1938-1939. The only other potential (and as it turned out, dubious) evidence for Qian's involvement, made public in 1950, was a handwritten copy of a membership card.

Regardless of their formal political affiliation, it is quite clear that Qian and Malina were passionate about fascists (and capitalists) in 1939. In January, Malina wrote home: "Still, as Tsien says, we must fight Fascism with the present US capitalists so better armaments are needed. Of course we cannot be certain that such path will not boomerang."

After the Japanese attack on Pearl Harbor finally drew the U.S. into war, Qian taught aeronautics to military officers at Caltech, which transformed itself into what was, in effect, a West Coast version of the Naval Academy in Annapolis. He also co-wrote, with Malina, the 1943 proposal that altered the GALCIT Rocket Project's trajectory from JATO motors to guided missiles. That transformation was based on the discovery of Nazi Germany's own missile program via intelligence photography. They proposed research and development of a guided missile of 75-mile range, far more than any U.S. rocket had ever achieved.

Qian became head of JPL's research analysis section in mid-1944, though he wasn't in that role for long. In addition to his teaching, he handled the theoretical development of the Private A rocket and edited the key post-war textbook on jet propulsion. Sometime late in 1944, he was invited by Theodore von Kármán to join his Scientific Advisory Group for the Army Air Corps. Qian spent early 1945 in Washington helping with the preparation of "Toward New Horizons," the basis of the post-war U.S. Air Force's research and development program. In May, he, von Kármán, and Malina flew to Germany to investigate Nazi accomplishments in aerodynamics, and jet and rocket propulsion.

Qian (second from right) during Private A rocket tests in December 1944 at Camp Irwin/Leach Springs.

Qian's career only ascended after this. He was offered tenure at MIT in 1946 and moved there in August. He applied for and received U.S. permanent residency in 1947. Soon after, he was offered the presidency of Jiatong University. He had already planned a visit to his father. But after he arrived in China, the Nationalist government withdrew the offer. Qian's biographer Iris Chang suggested that his loyalty was already in question within the Nationalist government's ruling party, the Kuomintang, even though his father had been a minor official. Qian returned to the U.S. after three months.

In October 1948, Qian was offered the leadership of not one, but two, new institutes for jet propulsion research, one at Princeton, and one at Caltech, both funded by the Guggenheim Foundation, as GALCIT had been initially. Caltech President Lee DuBridge cut Qian a better deal than Princeton did, and he returned to Pasadena in July 1949. He also applied for U.S. citizenship that year.

It's worth noting that in early 1946, Frank Malina had petitioned Caltech to start a civilian jet propulsion research program and had been rebuffed. This was one reason he left JPL, and rocketry, forever that year. The FBI's suspicions about his ties to Sidney Weinbaum and Professional Unit 122 were another. But less than three years later, Caltech gave Qian exactly what Malina had wanted.

The Chinese Communists won their revolt against the Nationalist government in 1949, establishing the People's Republic of China, which helps color what soon happened to Qian's soaring career. On June 6, 1950, the FBI interviewed him about Sidney Weinbaum. The same day, Qian's security clearance was revoked, though he didn't know it yet. Weinbaum was arrested June 16 and charged with perjury—he'd not listed his CPUSA membership on a security clearance form.

Two weeks after Weinbaum was arrested, the Korean War started. Later that year, the People's Republic of China entered the war, bringing the U.S. into conflict with it. Qian, who was fiercely loyal to his friends, refused to testify against Weinbaum, bringing him under suspicion as well.

But Qian had been under FBI surveillance already. A confidential informant, called T-1 in Qian's FBI file, who was an employee of JPL, had alleged in the spring of 1949 that Qian had been a member of a group at Caltech of questionable loyalty—Weinbaum's cell. Recently, historian Fraser MacDonald has contended

that T-1 was actually JPL Director Louis Dunn, a Caltech graduate raised in South Africa. But that's not so clear—the most detailed summary of this event in Qian's FBI file, from August 1949, names Louis Dunn and T-1 separately. In 2020, historian Zuoyue Wang and JPL's own archivist, Julie Cooper, uncovered another FBI informant within JPL, a member of the JPL section Qian had overseen. That person is more likely to have been the T-1 who informed on Qian. Suffice it to say that the FBI had more than one source within JPL.

The FBI's year of covert surveillance on Qian did not uncover evidence of espionage or disloyalty. They had discovered only his friendship with Weinbaum, and they continued working to prove his CPUSA membership for use in a perjury charge. This period of time is often known as the Second Red Scare. The House Un-American Activities Committee (HUAC) had launched investigations of Hollywood filmmakers and studios in 1947 and expanded that political attack to scientists and engineers in 1949. Malina and Weinbaum were two of the primary targets; because Qian knew them both, he was bound to be investigated.

Without his security clearance, Qian was cut off from classified research. He was also under pressure from his father to return again to China. He tried to resign immediately, but Caltech President DuBridge did not accept. Instead, he urged Qian to visit Undersecretary of the Navy Dan Kimball on Aug. 21, 1950. Kimball had been general manager of Aerojet, the company JPL's founders had also established to build JATO rockets during World War II, and he knew Qian from his rocket work. Qian told Kimball about his clearance problems and desire to visit China again. Kimball sent him to an attorney to discuss the clearance issues and also told him not to leave the U.S. He was too valuable and would probably be detained by the Communists for his knowledge. Kimball also called the Justice Department to ensure Qian would remain in the country. On his return to Los Angeles, Qian was met at the airport by an immigration agent and given a note that he wasn't going to be allowed to leave.

That might have been enough to end the whole affair. Had it remained a private matter, Kimball might have been able to prevent Qian's departure. But Kimball didn't know that Qian had already hired a moving company. While packing Qian's possessions, the movers found what they thought were classified documents, and they reported him to Customs. A joint Customs/FBI/intelligence task force impounded his luggage the same day he'd met with Kimball.

The incident landed Qian in the Los Angeles Times. A warrant for his arrest was issued on Aug. 25, 1950, though for reasons that have never been clear, he wasn't arrested until Sept. 7, the day after Sidney Weinbaum's conviction. He spent two weeks in prison on Terminal Island before an attorney Caltech hired managed to get him released on a $15,000 bond. DuBridge visited Qian more than once, while the wife of a former JPLer who was a Caltech graduate posted the bond anonymously.

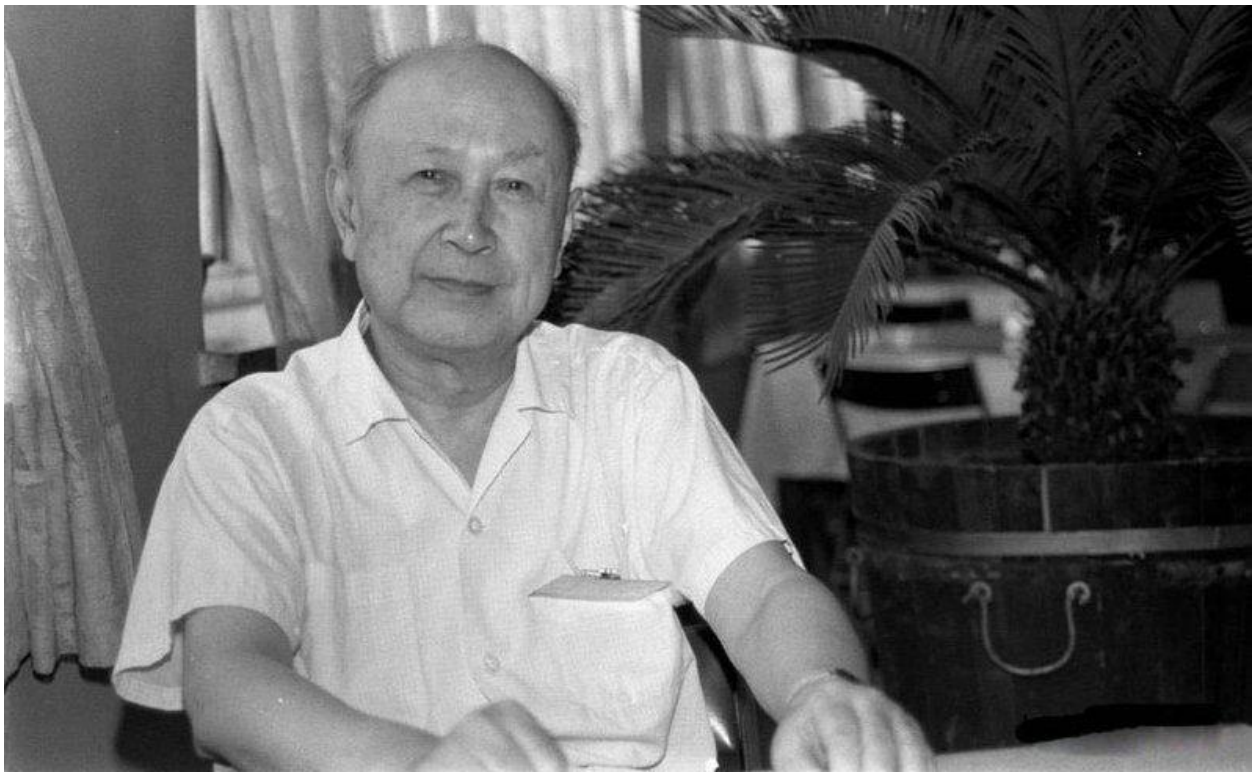
None of the allegedly classified documents turned out to still be classified, so that charge evaporated. Instead, the Immigration and Naturalization Service chose to try to expel Qian under the 1918 Anarchist Act, revised in 1950 to enable expulsion of non-citizens who were members of the Communist Party. His immigration hearing was held on Nov. 15; after a poor showing by the Immigration and Naturalization Service on the basis of very weak evidence—the police officer who'd made the copy of Qian's alleged party membership card was discredited by his own source—a second hearing was held in April 1951. This time, the government ruled that Qian should be deported.

But Qian's knowledge of U.S. rocketry was the real national security threat. Instead of deporting him immediately, the authorities put him under house arrest. He was allowed to continue teaching at Caltech and conducting unclassified research. He lived in Altadena during this time, with his wife, Jiang, whom he'd met as a child and married in Shanghai in 1947, and their two children, under continuous surveillance.

Qian's return to China came about in 1955, after negotiations over the exchange of prisoners taken during the Korean War. Qian was among the scientific prisoners named in the negotiations that the People's Republic of China (PRC) negotiators wanted back, and President Eisenhower approved their release. Qian and his family returned immediately—indeed, they decided so quickly and quietly his attorney didn't know he'd left. They arrived in Hong Kong (then still part of the British empire) on Oct. 8 and took a train to Shenzhen, where Qian and his family began a hero's tour of the PRC.

Dan Kimball later told an interviewer "[Qian's return] was the stupidest thing this country ever did. He was no more a Communist than I was—and we forced him to go."

To no one's surprise, Qian was put in charge of the PRC's ballistic missile program. He also set out to reform the nation's technical education, believing that a modern nation needed a strong corps of scientists and engineers. He rebuilt the missile program after the Soviet Union stopped supporting the People's Republic in 1960. As had been true in the United States and Soviet Union, the PRC's missile program led eventually to a successful space program, with a first satellite launch in 1970 and first crewed orbital flight in 2003.



Qian died in 2009, at the age of 97.

Qian's personal legacy is more mixed. A few years after his return, he wrote in support of one of Communist leader Mao Zedong's (formerly Mao Tse-Tung) great disasters, the Great Leap Forward. This absurdist fantasy imagined transforming the agrarian countryside into miniature steel mills, to accelerate industrialization. Instead, it created one of the world's great famines, killing tens of millions of Chinese people. We don't know what caused Qian to step far outside his own expertise in rockets and missiles. It's possible he was pressured, and also possible that he believed in it. Without access to his papers in China, there's no way to know.

Qian never returned to the U.S., even when invited by Caltech to receive an award. His son, born in the U.S. in 1948, however, did, receiving a master's degree at Caltech in 1988. Qian died in 2009, having outlived all of JPL's other founders. There is now a large museum complex dedicated to him in Shanghai.

There are other dimensions to the story of Qian's life in America. Another historian has suggested that one of the reasons for Qian's unhappiness in the U.S. was property covenants that barred sales of land and housing to non-whites, for example. In 1948, the California Supreme Court invalidated these in California, which might have helped motivate his return from MIT. But this is speculative—Qian's records went with him to the People's Republic, so we don't have access to what he experienced here and what he told his father back home about his experiences.

We know from Qian's son that he was a very proud person who felt humiliated by his treatment by a government he'd aided. Qian never believed he'd done anything wrong here. But a fuller understanding of Qian will have to await research by PRC-based scholars—and its translation into English.

Grieving in Isolation

By Celeste Hoang

How do you measure grief? Karl Strauss has done the math.

"My wife and I were married for 39 years. To put that into perspective, we've been married three days for every five days I've been alive," he explains. "That's 60 percent of my life. To lose someone like that is just devastating."

In September 2019, Strauss' wife, Janet—a longtime animal rights activist—was diagnosed with an extremely rare bird allergy, one that caused her lungs to shut down within six months. She died in February 2020, and Strauss reached out to JPL Space after reading an article on living alone during the pandemic that echoed his struggles in particular. "How about an article on coping with grief during this pandemic?" Strauss wrote in an email to us.

The pandemic has been a time of loss in many ways, both directly from the loss of loved ones due to the virus or other causes, and also indirectly from the loss of relationships, social networks, support systems, and communities.

Below, Strauss shares his story with the wider JPL audience to remind anyone else who has experienced a loss this past year that they are far from alone.

“It just hit me like a brick or worse,” Strauss, 67, says of the loss.

He took his bereavement leave from JPL, as well as two weeks of vacation, to make funeral arrangements and try to get his bearings again. When he returned to Lab, he was eager and thankful for the distraction of work and the emotional support of seeing his colleagues in person.

“I have a good stead of friends at JPL,” says Strauss, who has been an electrical engineer at the Lab for 35 years. “We would meet together every day in the 303 cafeteria just to tag up and chat about different crazy things. I needed some sense of normalcy again.”

What Strauss couldn’t anticipate when he returned was that the country was on the precipice of being hit hard by Covid-19. With widespread closures and stay-at-home orders, JPL was just two weeks away from mandatory telework on March 17, 2020.

Karl Strauss' wife of 39 years, Janet.

“All the normal coping methods I would’ve used were stripped away,” Strauss says. “Things like bowling, going to a movie, traveling, seeing friends at JPL—they weren’t options anymore.”

Instead, Strauss, like much of the country, became confined to his house. Isolating in the throes of grief meant his home was not a place of peace or refuge—rather, it was a constant reminder that his wife was gone. The familiar cadence of her presence was replaced by an overwhelming silence.

“There’s just the sense that there’s no longer a heartbeat to talk to,” he says. “One of the first things I did was cut the echo. I turned on every TV in the house just so there was a noise. I went to the local mall the day before shutdown to sit and just hear chatter.”

In those early months on his own, nothing seemed to help.

“I couldn’t stand to be alone in the house. I’d turn around and I’d see her rings or her favorite perfume and it’s like, oh, my god,” he says.

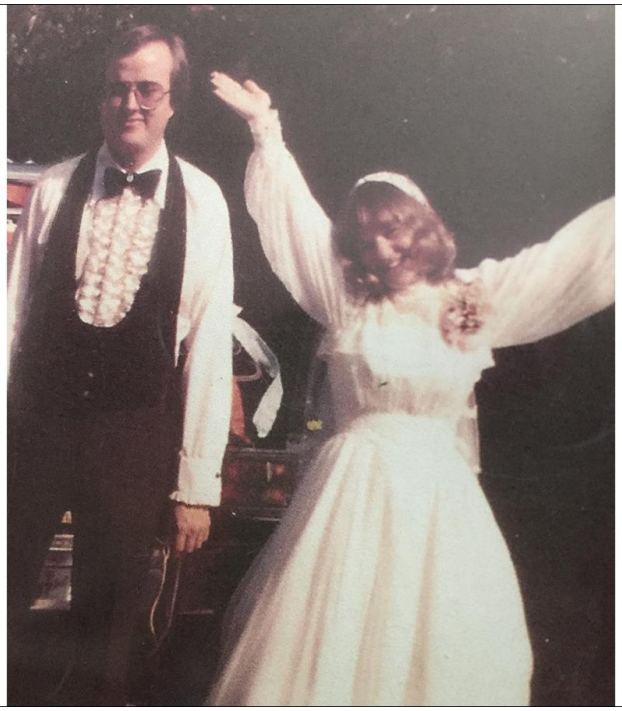
A Great Love, A Great Loss

Strauss and his wife met in 1980 during a blind date set up by her stepfather and stepmother. An avid fan of trains and model railroading, Strauss was a member of a dedicated group of volunteers who restored passenger cars on weekends in Southern California. When he attended the group’s annual Christmas banquet that year, they were both there, chatting him up for the evening. By the end of the night, they had an idea: Would he like to meet their daughter?

Strauss did, and the two were married within four months of their first date.

“Everything was so wonderful, why wait?” he recalls. “The sparks flew.”

Those sparks grew into a flame that burned for nearly four decades. “After so many years together, you complete each other’s sentences,” he says. “And then you can communicate with just a look.”



Karl and Janet on their wedding day, April 25, 1981.

The loss of someone he loved so much was staggering for Strauss. In the early months, his thoughts grew particularly dark. One of his wife’s doctors suggested Strauss join a local community church’s grief counseling group. All were welcome from any religious or non-religious background; Strauss attended a couple of sessions in early March, as well as Zoom sessions in the springtime.

Still, his grief continued to feel overwhelming. After six months—recognizing he was “still as depressed and woe-begotten as the day she passed”—he knew he needed to find another source of help.

“It was a profound sense of loneliness,” Strauss says.

He reached out to a counseling center and found a therapist in San Diego he met with over Zoom every Tuesday.

“She was just a marvelous person,” he says. “She would tell me, ‘Let’s just work our way through this.’”

Strauss’ therapist began by asking him to keep a journal and write down his level of grief each day on a scale of 1 to 10.

“At the beginning, I wrote down ‘17’ more than once,” he says. “But as time wore on, things changed. The nines and tens disappeared, and then they became ones. It’s taken a while; the loss of a loved one is a huge shock to the system. There are times when it’s good and times when it’s bad, and then there are some days where there's no grief at all.”

Strauss emphasizes that everyone recovers from grief in different ways, but for him, it centered on building a network of support to remind him he wasn’t alone. Alongside visits with his San Diego counselor, he continued attending the church grief group.

“There are 24 people in that group,” he says. “We’re all in a group that we don’t want to belong to, but just knowing you’re not the only who experienced the death of a loved one really helps.”

Strauss also credits his three sons—ages 38, 35, and 33—with being the cornerstones to his recovery.

During the pandemic, the four socially distanced, but his sons hosted virtual movie nights every week, regularly dropped off home-cooked meals such as lamb stew on his doorstep, and snuck into his yard one day and did all the yardwork. Over the summer, Strauss took himself and his dog to Yosemite, and his sons arranged a special delivery of filet mignon, beer, and a plain hamburger for the dog to be delivered to his cabin as a surprise.

“They said, ‘Pops, you deserve this.’ I just started bawling like a baby,” Strauss says.

Now, more than a year after his wife’s passing, Strauss is in a markedly different place emotionally and physically.

“I’m proud that I ‘graduated’ last week from therapy and that I've developed coping mechanisms in my body,” he says. “Just by walking the dog and modifying my diet, I lost 25 pounds and feel so healthy now. It’s good for him, and good for me, to just see other dogs and see green grass and see the birds outside.”

The good news didn’t stop there. Strauss was fully vaccinated in early March of this year and celebrated with a solo getaway to Las Vegas. And this summer, he plans to return to one of his beloved hobbies—and the source of how he met his wife: He’ll be volunteering in Chama, New Mexico, to restore steam engines and passenger and freight cars on the Cumbres and Toltec Scenic Railroad, a national historic landmark.

8 Ways to Cope With Grief: A Professional’s Advice

“Part of Karl’s healing is telling that story and knowing that he can help other people do the same,” says LifeMatters Critical Incident Responder Kelly Parbs.

Below, we spoke with Parbs on eight coping strategies that can help when facing the loss of a loved one, and how JPLers can take advantage of free counseling services available to employees through LifeMatters:

1. Identify your grief.

“It looks so different for different people,” Parbs says. “Some common reactions would be shock, disbelief, denial, anxiety, anger, sadness. Not sleeping or eating. Less common: feeling very numb and unable to express any sadness. It’s more complicated during Covid-19 because people are experiencing

different layers of loss. There's a lot of anxiety outside of grief but when it happens with grief, it's an interesting thing to sort out because people may have started with the anxiety of the pandemic and then had a major loss, or vice versa, so there's anxiety on top of anxiety. You're trying to figure out where it's from and the best method to cope. It's definitely more complicated. 1.

2. Identify your natural support system.

"Family members, friends, coworkers. Identify who those people are and allow them to love you and help you. People sometimes have a hard time leaning into that and they feel like a burden. Your natural support system are people who want to help you and comfort you, but they don't always know what to say or do. If it's comforting to hear stories about the ones you lost, it's okay to request those stories. Or if you want a day to talk about anything but your grief, it's okay to ask for that, too. You can say to them, 'I need a day off that topic for self-care.' Communicate clearly what you need. It's healing to allow people to help you. Turn your mind to the perspective that you're offering someone else the opportunity to not feel helpless or hopeless [when they help you]. Think about the times someone you love is hurting badly but you feel so helpless. It's a gift to allow someone to love you and be in your vulnerable space."

3. Talk to other people who are grieving.

"Of course, with Covid, that's a little bit more tricky. We're not walking by people in the hallway at work; we're not in the social circumstances where that happens naturally. But there are still a lot of opportunities to make that happen, and one of those is virtual support groups. Oftentimes, people don't know how to find one, and that's an area where LifeMatters can absolutely help. If someone gave us a call seeking support but they don't know how to find it, that's what we're here for. It's an area where technology has really aided us in bringing people together. These groups are really specific to the type of loss; people can get together with other people who have experienced a similar loss. I've also talked to several people who were really struggling with the loss of a pet and there are support groups for that type of loss.

4. Plan time to give your brain a rest from thinking about your loss.

"This does not mean minimizing or denying any feelings or experiences. It just means setting time aside so that your brain can truly rest. That has to be very intentional and it takes practice. Watch a movie that makes you smile, or talk to a friend about something other than grief. Some people enjoy hobbies that require focus, such as painting."

5. Mindfulness.

"Notice and accept your feelings without judging them. A mindfulness practice has helped a lot of different people through traumatic experiences. More of our clients are interested since the pandemic. On our website, there are mindfulness activities you can do and articles on mindfulness."

6. Journal.

"Karl did this and it's obvious he worked with someone who gave him really good ideas. It's a great way to organize your thoughts when you're feeling overwhelmed. People feel a sense of letting go, of relief, when they journal. It's also about the ability to go back and see your progress. When you think you're having a tough day and you look back two months, it's encouraging to see how far you've come."

7. Know when it's time to speak to a professional.

"Most people have a lot of excellent natural self-care skills and are wired to deal with grief. But at some point, some people need to reach out to a professional. They should consider talking to a doctor or a mental health professional, both of whom would have plenty of help to offer. If you're continuing to miss

work after a couple of weeks, unable to sleep, feeling like you want to harm yourself, isolating, or misusing or abusing alcohol—these are all red flags that it's time to reach out."

8. Tap into LifeMatters resources available through JPL.

"Pandemic or not, you are never alone," Parbs says. "There's access 24/7 to our hotline at 1-800-367-7474, which is always answered by a professional counselor. These services are confidential within the limits of the law. I've worked for LifeMatters for 34 years and I can tell you that my coworkers are kind, loving human beings who care about people and are literally there 24/7 to pick up that call for any reason. It might be because someone's lonely and needs someone to talk to, or someone is truly in a crisis situation. If you are experiencing any stressor—truly anything—we likely have a resource for you. In addition to that 24/7 phone support, JPLers get five free sessions per issue with counselors. There's no co-payment, no deductible, no paperwork, no accessing your insurance, and you'll speak with a highly qualified counselor. In addition to all the counseling and mental health, there's also free legal and financial consultation, things which can compound grief. We can help in all of those areas. It just gives people a little bit of relief so they can tend to their grief."

Events

NASA Panel Event: The Power of Active Allyship

Thursday, June 17
11 a.m. - noon

NASA TV link

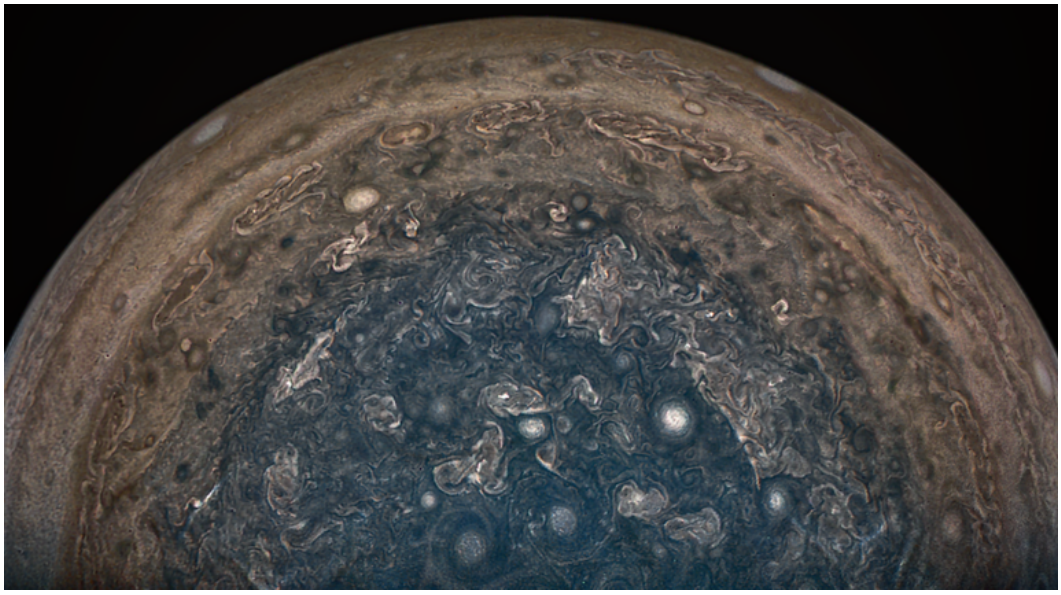
As mentioned in Administrator Bill Nelson's email to the NASA community:

"The theme of this year's agency event for Pride Month, the "Power of Active Allyship," will air on NASA Television and the agency's website at 2 p.m. EST on June 17. The event recognizes and celebrates the fact that our success as a team relies on our diversity and continual support and respect for each other. We embrace this theme and are committed to a culture of diversity, equity, and inclusion, where all employees feel welcomed, respected, connected, and engaged.

I invite everyone to watch the June 17 panel discussion, during which members of the LGBTQ+ community and allies discuss the issues and opportunities we face as a united NASA family. I encourage each of us to reflect on ways we can support our LGBTQ+ colleagues and friends.

Every member of the NASA family brings valuable perspective, life experience, and background that drives our successful journey and continues to make NASA one of the best places to work. The expertise of our entire diverse workforce will be required to meet

the requirements of the monumental and exhilarating tasks ahead. We are always learning and, together, we are unstoppable."



Von Karman Lecture Series: Oh, Jupiter! We Thought We Knew You

Thursday, June 17
7 p.m. - 8:30 p.m.

Webcast
YouTube link
Ustream link

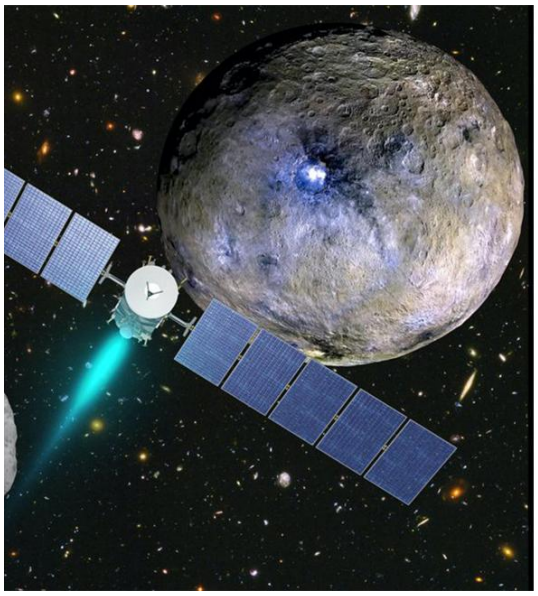
Our knowledge of the Jupiter system has grown exponentially in the past few years however, the more we know, the more questions we have. We'll discuss how our theories have changed and what's next for Jupiter and Europa.

Speakers:
Cynthia Phillips, Europa Project Staff Scientist, NASA/JPL
Steve Levin, Juno Project Scientist, NASA/JPL

Host:
Brian White, Public Services Office, NASA/JPL

Co-Host:
Lindsey McLaurin, Public Outreach Specialist, NASA/JPL

JPL Family News



Awards

Dawn and MAVEN Flight Teams Honored by SpaceOps

The Dawn Flight Team and the MAVEN Flight Team are receiving International SpaceOps Awards for Outstanding Achievement--an honor presented only every other year. The awards come from the International Committee on Technical Interchange for Space Mission Operations and Ground Data Systems--commonly known as SpaceOps.

This award is designed to honor "outstanding efforts in overcoming space operations and/or support challenges, and recognizes those teams whose exceptional contributions were critical to the success of one or more space missions."

Specifically for Dawn, the organization says it is honoring the team "For outstanding success in exploring two alien words, Ceres and Vesta, and overcoming the critical failures of reaction wheels."

After launching in 2007, Dawn orbited and explored those two worlds, the two most massive objects in the main asteroid belt between Mars and Jupiter. The spacecraft studied Vesta from 2011-2012, and dwarf planet Ceres, from 2015-2018--before the mission was wrapped up.

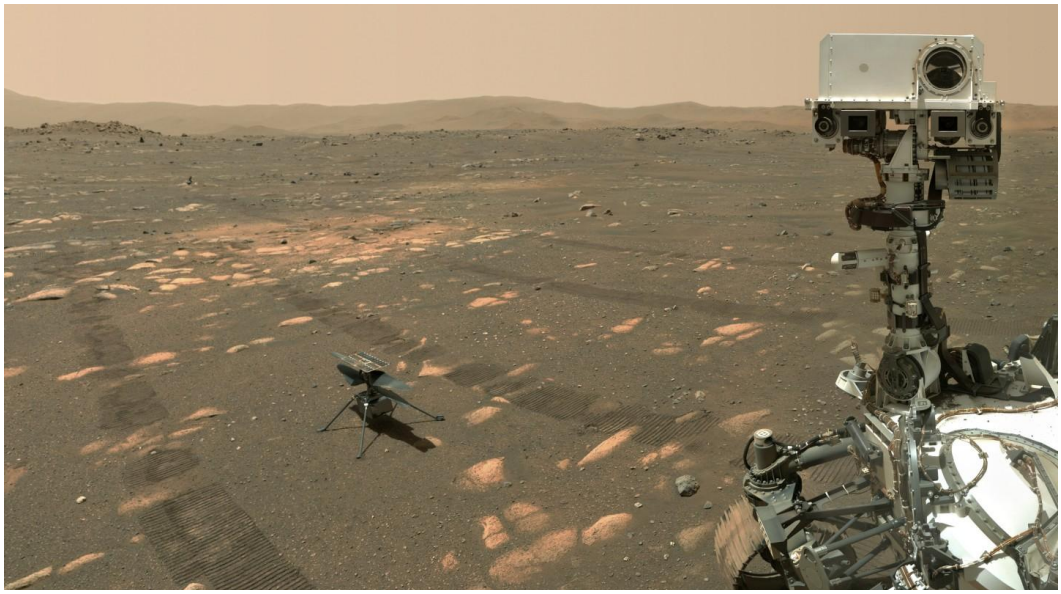
Dawn is the only spacecraft ever to orbit two extraterrestrial destinations. This accomplishment was enabled by ion propulsion (previously proven by Deep Space 1). The spacecraft was designed to use at least three reaction wheels at all times to control its attitude, so it carried four. Over the course of the mission, it lost three, but the team saved the mission, exceeded all objectives at Vesta and at Ceres, and even accomplished two extended missions at Ceres. Where is Dawn now? Dawn was left in orbit around Ceres, because of that world's great astrobiological interest and to follow planetary protection requirements.

In addition, MAVEN's flight team (Mars Atmosphere and Volatile Evolution) is receiving an International SpaceOps Award for Outstanding Achievement for its nearly two-month-long aerobraking campaign. That campaign prepared the spacecraft to provide critical relay duties for the Perseverance rover and other ground missions. The award cites "exceptional planning and execution of the MAVEN spacecraft orbit transition for critical communications relay duties to support upcoming Mars missions…" MAVEN was not designed for a prolonged aerobraking campaign, so the team developed and executed a flawless transition while still preserving the spacecraft's science capabilities.

Launched in Nov. 2013, MAVEN has been exploring the Red Planet's upper atmosphere, ionosphere, and interactions with the Sun and solar wind.

While NASA's Goddard Space Flight Center manages the MAVEN project and built two of the science instruments, JPL provides program management via the Mars Program Office, plus data-relay telecommunications hardware and operations, navigation support, and Deep Space Network operations.

Each winning team received an engraved crystal trophy and certificate at the virtual SpaceOps 2021 conference May 3-5.



AIAA Honors Ingenuity Flight Team for Design and Flight Test Validation

The Ingenuity Mars helicopter team has been "flying high" with the success of the experimental rotorcraft, which has been years in the making, and now the team is being honored with the 2021 American Institute of Aeronautics and Astronautics (AIAA) Space Systems Award. The AIAA's Space Systems Technical Committee selected the helicopter team for the award to honor "the design and flight test validation of the first helicopter designed for flight at Mars." The official presentation will take place in Las Vegas in November.

The Space Systems Award recognizes outstanding achievements in the architecture, analysis, design, and implementation of space systems.

Ingenuity joins several previous JPL recipients, including the InSight flight team, which was honored in 2020. See the full list of honorees.

The latest information about Ingenuity, plus a 3D video, is available at the helicopter website.

JPL Wins Two Webby Awards

NASA received three Webby Awards and was honored as the People's Voice winner in two categories in the 2021 Webby Awards competition. The awards, given by the International Academy of Digital Arts and Sciences, recognize the best in online communications.

The two JPL-led Webby winners are:

- Exoplanet Exploration, exploring the science of planets outside our solar system, for Website and Mobile Site: Science.

- Eyes on the Earth, showing global climate change in real time, for Website and Mobile Site: Data Visualization.

NASA's flagship social media accounts also won for Best Overall Social Presence: Brand

“We are doubly honored with these awards,” said Marc Etkind, NASA’s associate administrator for communications. “It’s great to have our work selected by the Webby judges, but the public is our ultimate audience, so it’s just as gratifying to be recognized by them for our efforts to share the excitement of exploration, both of the cosmos and our home planet, across all our platforms.”

Read the full news release here:
https://www.jpl.nasa.gov/news/nasa-wins-3-2021-webby-awards-2-peoples-voice-honors

Retirees

The following JPL employees recently announced their retirements:

50+ Years:

Philip S. Callahan, Section 3340, 51 years

40+ Years:

Rosemary Guerrero, Section 3918, 42 years

30+ Years:

Rodica Ionasescu, Section 392J, 36 years
Allen Halsell, Section 392C, 36 years
Paul Van Velzer, Section 357F, 31 years
Sunny Schofield, Section 3119, 30 years

20+ Years:

Mark M. Hetzel, Section 352F, 24 years
Sonja C. Wendt, Section 1161, 22 years
Hong Yang, Section 2210, 22 years
Simeon M. Young, Section 357F, 21 years